DEVAL L. PATRICK, GOVERNOR
TIMOTHY P. MURRAY, LT. GOVERNOR
JEFFREY B. MULLAN, SECRETARY & CEO
LUISA PAIEWONSKY, ADMINISTRATOR

Moving Massachusetts Forward.
massDOT
Highway

Memorandum

To: All Interested Parties

From: Shoukry Elnahal, P.E.
Director, Accelerated Bridge Program

Date: March 29, 2010

Re: Charles River Basin
Bicycle and Pedestrian Counts – Fall 2009

In the Fall of 2009, the Accelerated Bridge Program tasked our bicycle and pedestrian consultant, Halvorson Design Partnership, to engage in a bicycle and pedestrian count study at numerous locations along the Charles River Basin. The counts were conducted on two separate days:

- Wednesday, September 23, 2009 from 4:30 to 6:30 PM
- Saturday, September 26, 2009 from 12:00 to 2:00 PM

The following pages represent the summary of finding, prepared by Halvorson Design Partnership.

For questions related to this study, please contact Stephanie Boundy, Public Outreach Coordinator for the Accelerated Bridge Program, at Stephanie.Boundy@state.ma.us.

Massachusetts Department of Transportation, Highway Division • www.mass.gov/massdot
TEN PARK PLAZA • BOSTON, MA 02116-3969 • PHONE: 617.973.7000 • FAX: 617.973.8031 • TDD: 617.973.7306

To fully comprehend the existing conditions along the path and bridge system within the Charles River Basin, it is important to understand the number of non-motorized users of the Reservation and the patterns in which they interact with the region's premiere open spaces. To do so, a peak level count of pedestrians, runners, bicyclists and skaters along the path system and across the Basin's bridges was performed. Because of the scale of the open space, a significant number of locations were chosen in which to make the counts, 23 in total. In these combined locations, nearly 8,000 non-motorized users per hour were counted on a weekday evening and over 6,000 per hour during a Saturday afternoon.

The counts provide a valuable snapshot of the level of walking, running, cycling and skating along the Charles River Reservation and across the river bridges, serving as baseline measurements for MassDOT, DCR and the adjacent cities to evaluate trends in the future. Future counts are anticipated so that changes in the use of the Reservation can be tracked over time.

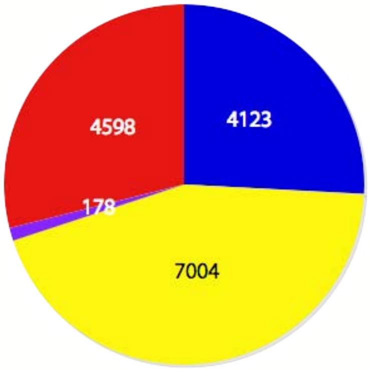
The counts were conducted for two primary reasons, including:

- Documenting a baseline of peak-level activity at key locations, allowing MassDOT, DCR and the adjacent cities to measure changes in volumes over a long period of time
- Correlating count data with changes in the walking or cycling environment such as installation of bicycle lanes, intersection enhancements, path improvements or increased publicity about the recreational improvements to the Reservation.

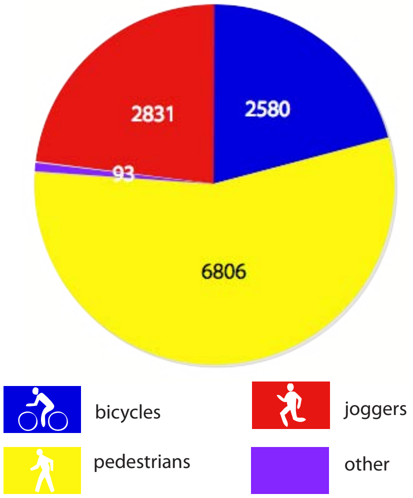
Tallies at the 23 locations were conducted on two non-consecutive days in late September 2009, with one day scheduled for a weekday evening commute and the second scheduled for a weekend mid-day. The weekday evening count was conducted from 4:30 – 6:30 PM and the weekend count from 12:00 – 2:00 PM. The evening peak period was chosen as the focus because of the greater mix of trips than in the morning when most trips are work-related. The count times and overall guidelines were developed in conjunction with the National Bicycle and Pedestrian Documentation Project (NBPDP), a joint collaboration between Alta Planning + Design and the Institute of Transportation Engineers. The NBPDP guidelines will be used for all subsequent counts within the Charles River Reservation and all data from the counts will be forwarded to the NBPDP for further analysis and to add to the growing collection of consistent information about people who are walking and bicycling in different parts of the country.

Non-Motorized User Counts

Wednesday 9/23/09
4:30 - 6:30 PM
Total Non-Motorized User Count = 15,903



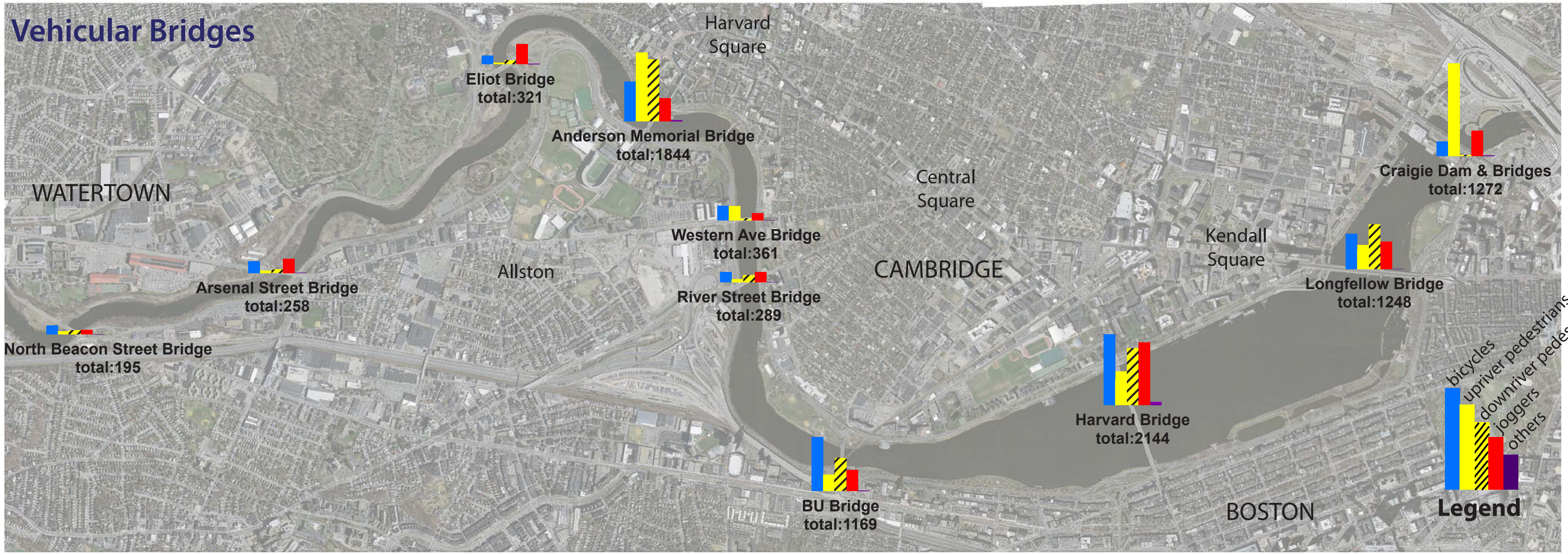
Saturday 9/26/09
12:00 - 2:00 PM
Total Non-Motorized User Count = 12,310

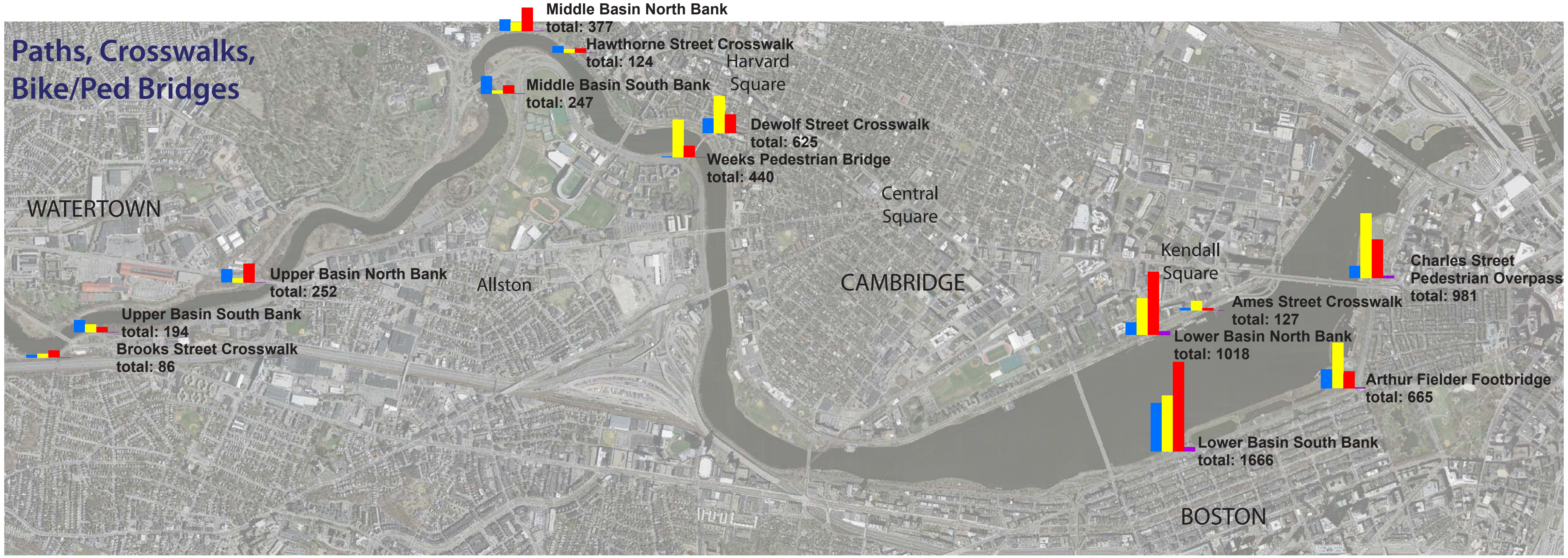


A member of the consultant team counts walkers, joggers and cyclists along the Esplanade near the Harvard Bridge.

Counts were collected at three general locations: 1) Charles River bridges, 2) prime locations on both banks of the linear path system and 3) key connections to the Reservation, such as the footbridges over Storrow Drive or crosswalks across Memorial Drive in Cambridge. At each bridge location, pedestrians were tracked to determine whether they were using the upstream or downstream sidewalk on the bridge. Any resulting imbalance on the two sidewalks implies a lack of connectivity or other impediments to pedestrian travel, helping explain the preference of one side over the other.

At all count locations, consultant staff counted gender differences in each of the user categories: pedestrians, bicyclists, joggers and other. While the gross number of walkers, skaters and joggers was approximately split evenly between men and women, the ratio of male cyclists to female ranged from 2:1 in some areas to 3:1 in others. This ratio is consistent with count data and anecdotal evidence from cities throughout the country. While bike-friendly cities in Northern Europe have an even split between men and women (in some cases more women cyclists than men), in North American cities with limited bicycling infrastructure, the number of traffic-tolerant male cyclists is higher in all cases. In cities that strive to create a fully-integrated network of bike facilities such as Portland, Oregon or Montreal, the number of female cyclists has inched closer to male cyclists but continues to be approximately half of the gross number of men. The expectation along the Charles River Basin is that the ratio of men to women will, in time, begin to balance out as the number of female cyclists increase, primarily due to improvements to bicycle infrastructure along the Charles River Basin and the surrounding communities.

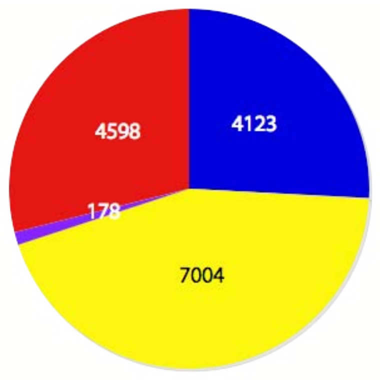

Vehicular Bridges
Harvard Square
Eliot Bridge total:321
Anderson Memorial Bridge total:1844
WATERTOWN
Central Square
Kendall Square
Craigie Dam & Bridges total:1272
Western Ave Bridge total:361
Arsenal Street Bridge total:258
Allston
CAMBRIDGE
River Street Bridge total:289
Longfellow Bridge total:1248
North Beacon Street Bridge total:195
Harvard Bridge total:2144
bicycles
upriver pedestrians
downriver pedestrians
joggers
others
BU Bridge total:1169
BOSTON
Legend


Middle Basin North Bank total: 377
Hawthorne Street Crosswalk total: 124
Paths, Crosswalks, Bike/Ped Bridges
Harvard Square
Middle Basin South Bank total: 247
Dewolf Street Crosswalk total: 625
Weeks Pedestrian Bridge total: 440
Central Square
WATERTOWN
Kendall Square
Charles Street Pedestrian Overpass total: 981
Upper Basin North Bank total: 252
Allston
CAMBRIDGE
Ames Street Crosswalk total: 127
Upper Basin South Bank total: 194
Lower Basin North Bank total: 1018
Brooks Street Crosswalk total: 86
Arthur Fielder Footbridge total: 665
Lower Basin South Bank total: 1666
BOSTON

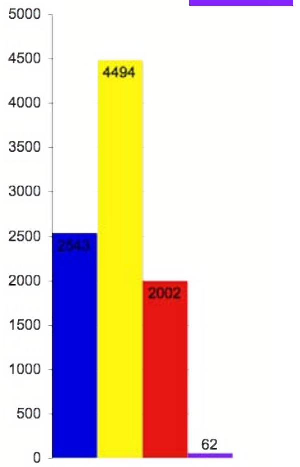
Non-Motorized User Counts

Wednesday 9/23/09 4:30 - 6:30 PM

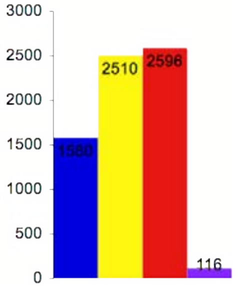
Total Count = 15,903



🟦 bicycles
🟥 joggers
🟨 pedestrians
🟪 other

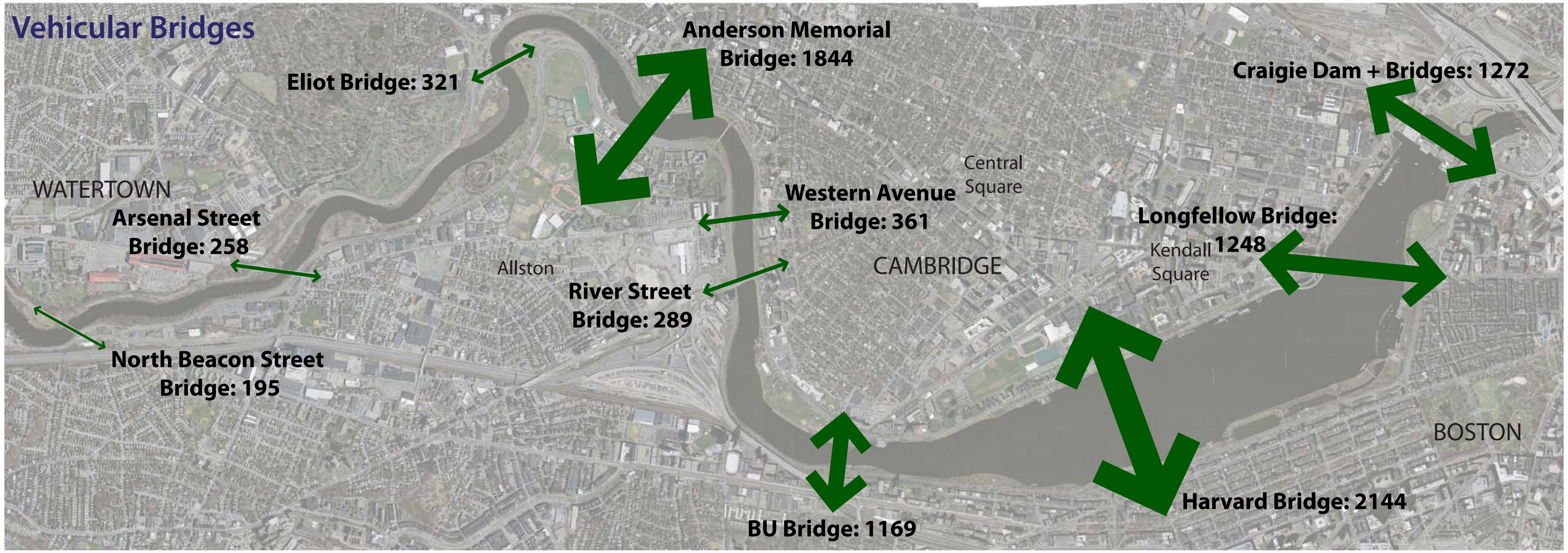


Vehicular Bridges
Total = 9,101

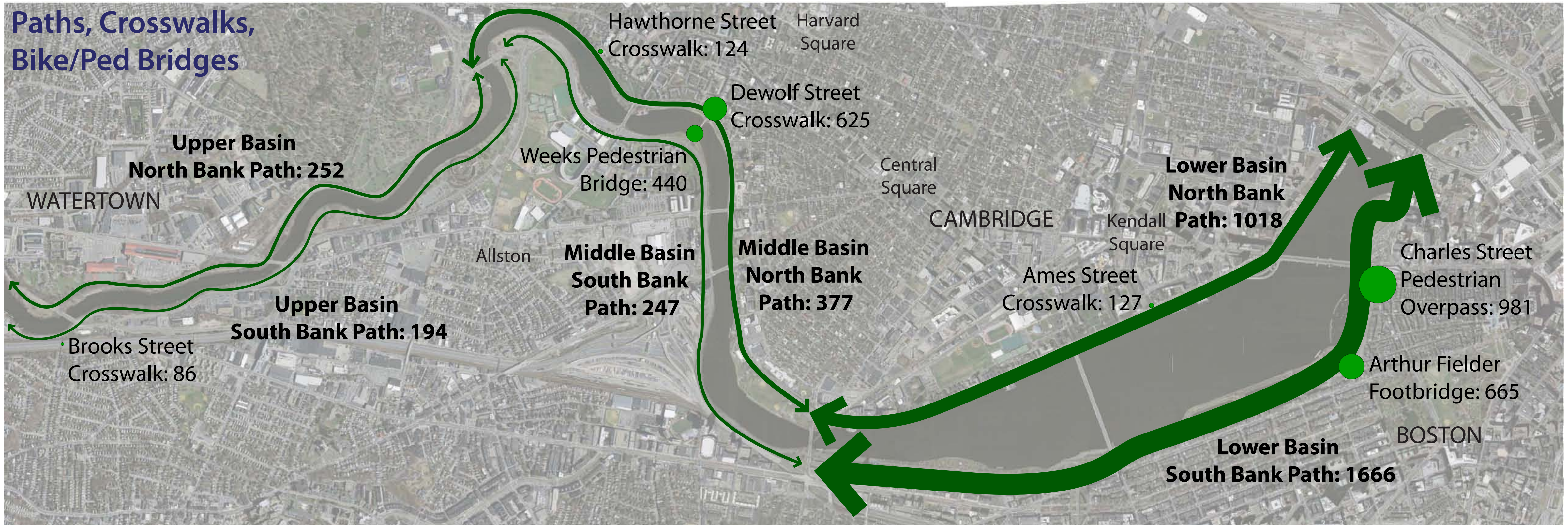


Paths, Crosswalks,
Bike/Ped Bridges
Total = 6,802

Vehicular Bridges



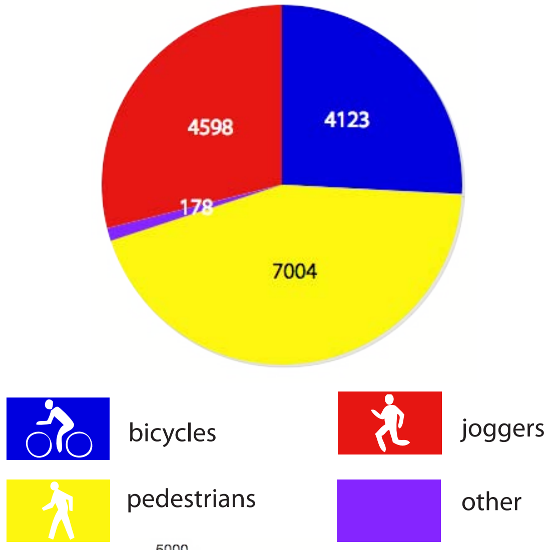
Paths, Crosswalks, Bike/Ped Bridges

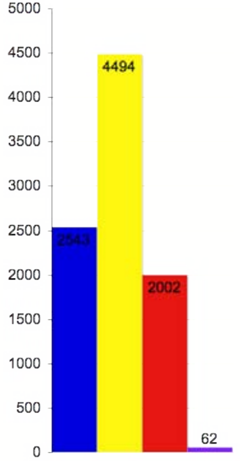

Hawthorne Street Crosswalk: 124
Harvard Square
Dewolf Street Crosswalk: 625
Upper Basin North Bank Path: 252
Weeks Pedestrian Bridge: 440
Central Square
Lower Basin North Bank Path: 1018
WATERTOWN
CAMBRIDGE
Kendall Square
Allston
Middle Basin South Bank Path: 247
Middle Basin North Bank Path: 377
Ames Street Crosswalk: 127
Charles Street Pedestrian Overpass: 981
Upper Basin South Bank Path: 194
Brooks Street Crosswalk: 86
Arthur Fielder Footbridge: 665
BOSTON
Lower Basin South Bank Path: 1666

Non-Motorized User Counts

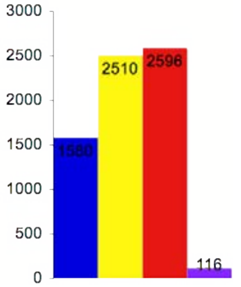
Wednesday 9/23/09 4:30 - 6:30 PM

Total Count = 15,903





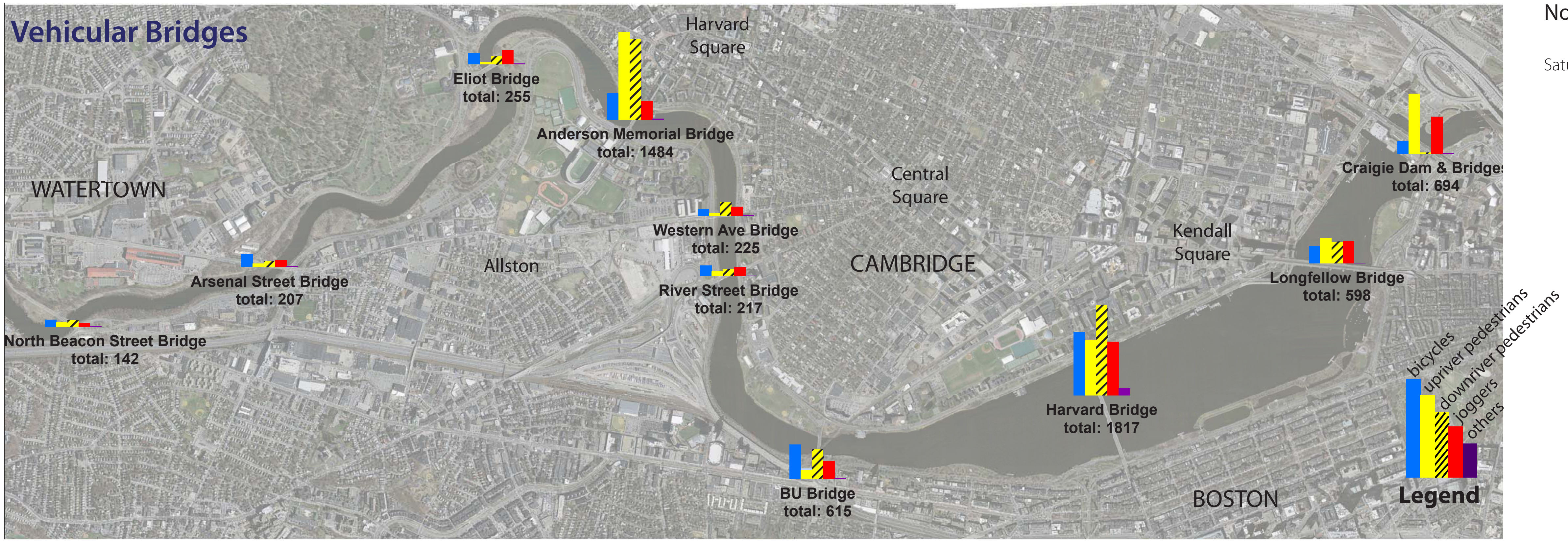
Vehicular Bridges
Total = 9,101

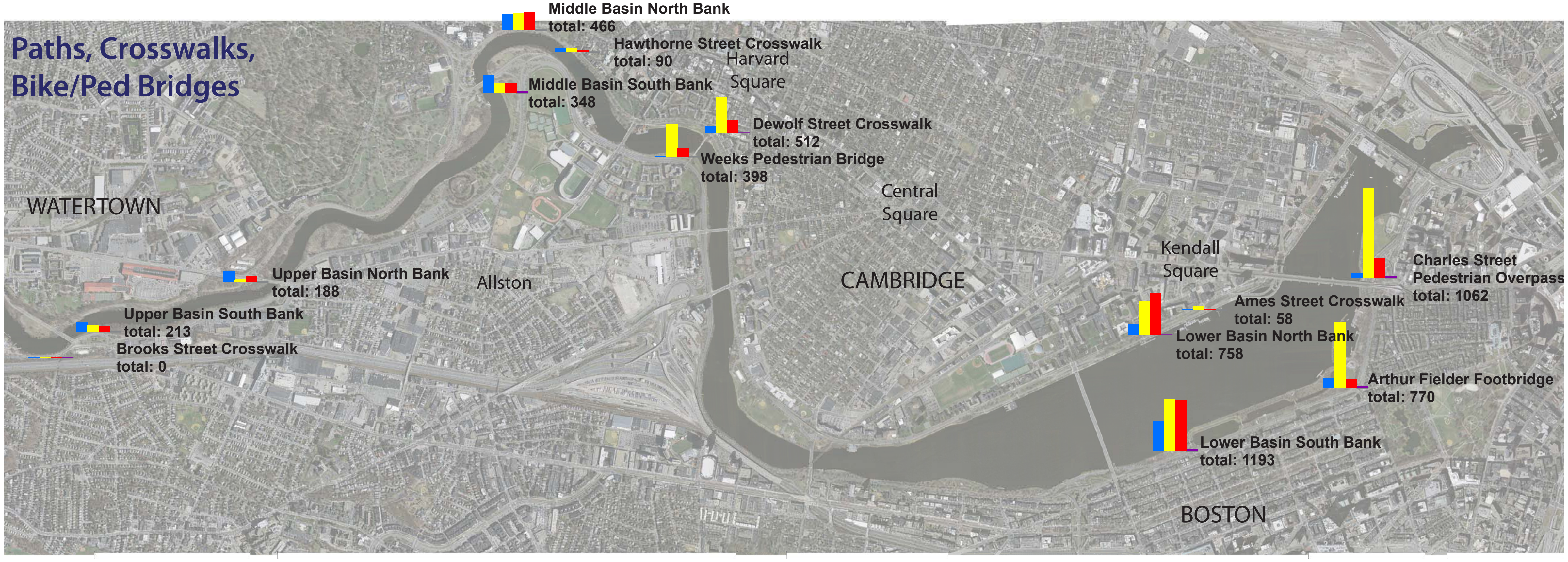


Paths, Crosswalks,
Bike/Ped Bridges
Total = 6,802

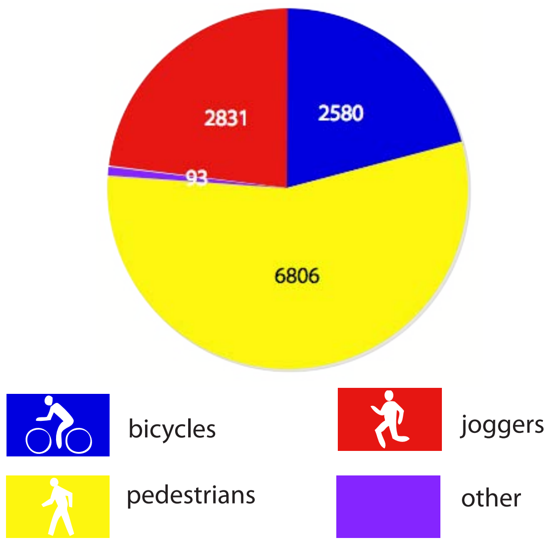
Non-Motorized User Counts

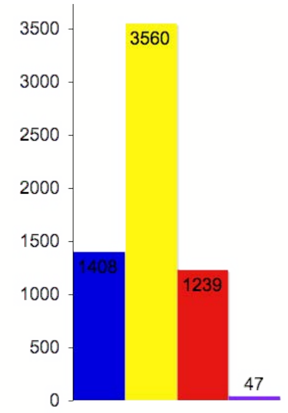
Saturday 9/26/09 12:00 - 2:00 PM


Vehicular Bridges
Harvard Square
Eliot Bridge total: 255
Anderson Memorial Bridge total: 1484
WATERTOWN
Central Square
Craigie Dam & Bridges total: 694
Kendall Square
Western Ave Bridge total: 225
Allston
CAMBRIDGE
Arsenal Street Bridge total: 207
River Street Bridge total: 217
Longfellow Bridge total: 598
North Beacon Street Bridge total: 142
Harvard Bridge total: 1817
bicycles
upriver pedestrians
downriver pedestrians
joggers
others
BU Bridge total: 615
BOSTON
Legend

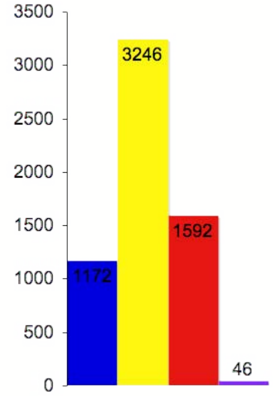

Middle Basin North Bank total: 466
Paths, Crosswalks, Bike/Ped Bridges
Hawthorne Street Crosswalk total: 90
Harvard Square
Middle Basin South Bank total: 348
Dewolf Street Crosswalk total: 512
Weeks Pedestrian Bridge total: 398
WATERTOWN
Central Square
Kendall Square
Charles Street Pedestrian Overpass total: 1062
Upper Basin North Bank total: 188
Allston
CAMBRIDGE
Ames Street Crosswalk total: 58
Upper Basin South Bank total: 213
Lower Basin North Bank total: 758
Brooks Street Crosswalk total: 0
Arthur Fielder Footbridge total: 770
Lower Basin South Bank total: 1193
BOSTON

Total Count = 12,310



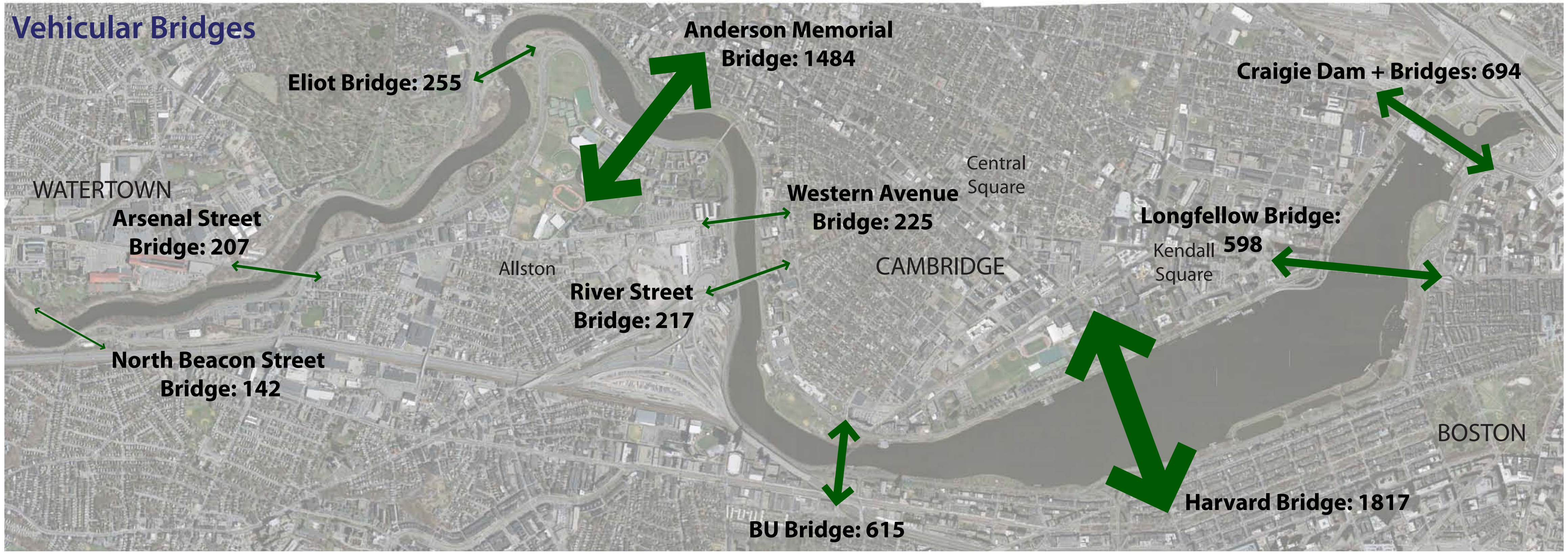


Vehicular Bridges
Total = 6,254

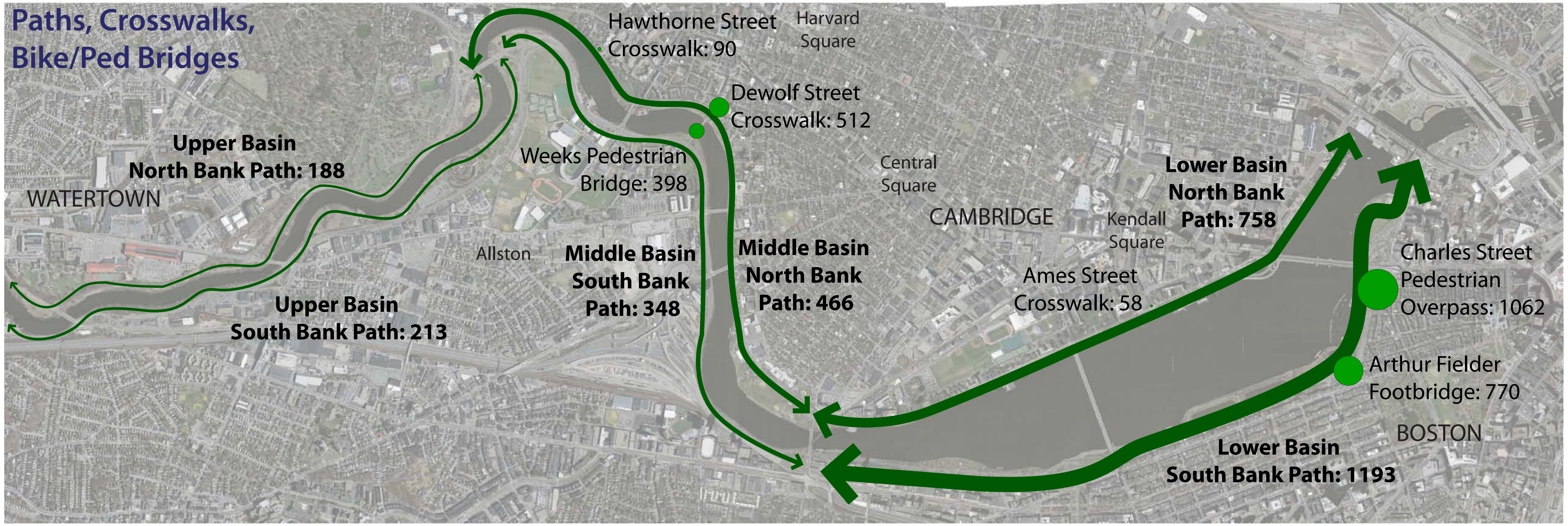


Paths, Crosswalks,
Bike/Ped Bridges
Total = 6,056

Vehicular Bridges



Paths, Crosswalks, Bike/Ped Bridges


Hawthorne Street Crosswalk: 90
Harvard Square
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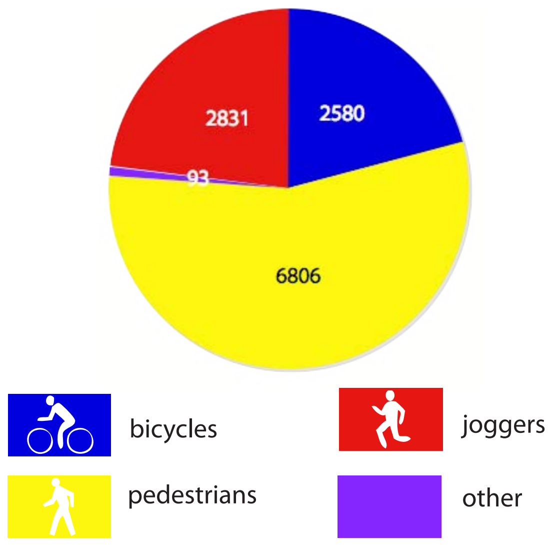
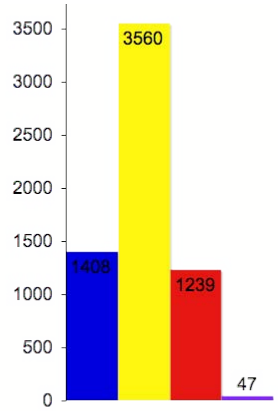
Arthur Fielder Footbridge: 770
BOSTON
Lower Basin South Bank Path: 1193

Non-Motorized User Counts

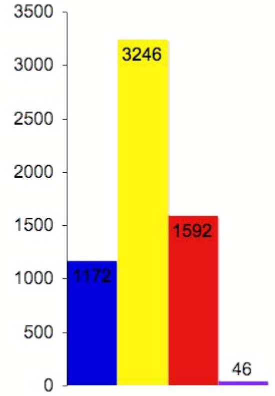
Saturday 9/26/09 12:00 - 2:00 PM

Total Count = 12,310





Vehicular Bridges
Total = 6,254



Paths, Crosswalks, Bike/Ped Bridges
Total = 6,056

Wednesday September 23, 2009 4:30 - 6:30 pm (slightly overcast skies, low 70's)

Site Locations	Site #	F. Bicyclists	M. Bicyclists	F. Upriver Peds	M. Upriver Peds	F. Downriver Peds	M. Downriver Peds	F. Joggers	M. Joggers	Other	Totals
Craigie Dam & Bridges	1	33	106	465	412	3	7	111	129	6	**1272**
Longfellow Bridge	2	113	221	102	126	208	216	95	165	2	**1248**
Charles Street Pedestrian Overpass	3	38	73	254	270			151	171	24	**981**
Arthur Fielder Footbridge	4	38	133	179	153			58	95	9	**665**
Ames Street Crosswalk	5	5	16	32	54			7	13	0	**127**
Lower Basin North Bank	6	34	80	144	154			246	325	35	**1018**
Lower Basin South Bank	7	117	319	219	163			351	459	38	**1666**
Harvard Bridge	8	183	486	127	189	257	281	280	312	29	**2144**
BU Bridge	9	187	323	82	62	157	153	101	100	4	**1169**
River Street Bridge	10	26	70	11	17	33	35	38	57	2	**289**
Western Ave Bridge	11	46	94	67	69	6	11	24	43	1	**361**
Dewolf Street Crosswalk	12	52	83	133	202			74	81	0	**625**
Weeks Pedestrian Bridge	13	2	5	146	195			46	46	0	**440**
Anderson Memorial Bridge	14	118	259	225	425	264	323	106	113	11	**1844**
Hawthorne Street Crosswalk	15	20	42	14	7			17	24	0	**124**
Middle Basin North Bank	16	30	75	34	24			90	123	1	**377**
Eliot Bridge	17	23	59	7	5	19	13	95	96	4	**321**
Middle Basin South Bank	18	42	117	12	10			32	31	3	**247**
Upper Basin North Bank	19	33	88	17	20			74	18	2	**252**
Arsenal Street Bridge	20	22	89	7	14	18	13	71	22	2	**258**
Upper Basin South Bank	21	24	87	31	17			21	11	3	**194**
North Beacon Street Bridge	22	19	66	16	11	21	17	22	22	1	**195**
Brooks Street Crosswalk	23	2	25	16	10			28	4	1	**86**
Totals		**1207**	**2916**	**2340**	**2609**	**986**	**1069**	**2138**	**2460**	**178**	**15903**

Saturday September 26, 2009 12:00 - 2:00 pm (clear sunny skies, low 70s)

Site Locations	Site #	F. Bicyclists	M. Bicyclists	F. Upriver Peds	M. Upriver Peds	F. Downriver Peds	M. Downriver Peds	F. Joggers	M. Joggers	Other	Totals
Craigie Dam & Bridges	1	30	56	213	186	4	4	131	69	1	**694**
Longfellow Bridge	2	37	83	84	94	75	76	80	68	1	**598**
Charles Street Pedestrian Overpass	3	17	32	434	406			95	68	10	**1062**
Arthur Fielder Footbridge	4	33	62	321	269			43	35	7	**770**
Ames Street Crosswalk	5	4	9	12	29			3	1	0	**58**
Lower Basin North Bank	6	45	54	158	158			203	140	0	**758**
Lower Basin South Bank	7	89	196	253	216			248	179	12	**1193**
Harvard Bridge	8	150	289	163	223	320	306	191	150	25	**1817**
BU Bridge	9	101	137	32	40	104	78	64	56	3	**615**
River Street Bridge	10	30	44	17	15	20	28	24	38	1	**217**
Western Ave Bridge	11	16	32	11	6	39	55	33	30	3	**225**
Dewolf Street Crosswalk	12	19	41	154	182			58	58	0	**512**
Weeks Pedestrian Bridge	13	6	5	133	174			44	36	0	**398**
Anderson Memorial Bridge	14	67	117	234	370	214	347	59	72	4	**1484**
Hawthorne Street Crosswalk	15	21	21	20	9			7	11	1	**90**
Middle Basin North Bank	16	55	93	82	62			85	86	3	**466**
Eliot Bridge	17	26	54	8	9	30	25	46	54	3	**255**
Middle Basin South Bank	18	61	110	49	39			47	33	9	**348**
Upper Basin North Bank	19	23	79	12	16			32	25	1	**188**
Arsenal Street Bridge	20	24	67	12	11	22	21	23	24	3	**207**
Upper Basin South Bank	21	19	78	34	24			31	24	3	**213**
North Beacon Street Bridge	22	14	34	16	14	22	12	14	13	3	**142**
Brooks Street Crosswalk	23	NO DATA COLLECTED									**0**
Totals		**887**	**1693**	**2452**	**2552**	**850**	**952**	**1561**	**1270**	**93**	**12310**